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Two-fluid hydrodynamic model for superfluids in fractal dimensions

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Abstract

It was recognized last years that the state of quantum liquids at nanoscales could be considered as some new state of quantum matter. Nanoporous media found to show the fractal geometry behavior so the problem of the correct description of quantum liquids in the space with fractal dimensions is a rather interesting. In the present work we develop two-hydrodynamic model for superfluids in fractal geometry and investigate the wave propagation and phenomena like to "sound transformations" in superfluids in this case. © 2009 IOP Publishing Ltd.

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